Econfina – Fenholloway Rivers Numeric Nutrient Criteria (40 CFR 131.43)

Site Specific Alternative Criteria Summary Report

Buckeye Florida, L.P. (Buckeye) is applying for site specific alternative criteria for total nitrogen (TN) and total phosphorous (TP) for the Econfina River (WBID 3402) and for the Fenholloway River (WBIDs 3473B and 3473C) in accordance with 40 CFR 131.43, *Water Quality Standards for the State of Florida's Lakes and Flowing Water* (Final Rule), published in the Federal Register on December 6, 2010 (75 Federal Register 75762).

Econfina River (WBID 3402)

The Econfina River is a minimally disturbed flowing water which spans the length of Taylor County Florida and ultimately drains into the Gulf of Mexico. Both the Florida Department of Environmental Protection (FDEP) and the US Environmental Protection Agency (USEPA) have previous recognized the river as having good biological health, and both have concluded the river is a good reference for blackwater streams in the area. The USEPA Region 4 used it in 2009 as the reference stream for setting nutrient total maximum daily loads for the Fenholloway River. The TMDL was adopted for the purpose of achieving the Florida narrative nutrient criteria: "…in no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora and fauna." FDEP considers station TAY170LR in the lower end of WBID 3402 to be a reference site for good nutrient health. For this site they conclude "…not only are the nutrients concentrations reflective of minimally disturbed conditions, they are associated with biota demonstrated to be fully supportive of designated use (healthy, well balanced populations of aquatic organisms)." There are no point source discharges in WBID 3402 and the watershed Land Development Index (LDI) is 1.47. From 1996 to 1998, a total of 18 Stream Condition Indexes (SCIs) were performed at a site located approximately 3000 meters upstream of TAY170LR as part of a study to evaluate the effectiveness of forestry best management practices. All 18 of these SCIs scored in the category referred to as "excellent" in the earlier version of the index, indicating that this site has a long demonstrated history of healthy biota. From 2004 to 2008, 8 additional SCIs were performed in this WBID with scores ranging from 40 to 59 and an average of 50, demonstrating continued healthy biota.

Even though the Econfina River demonstrates excellent biological health, it exceeds the one in three year annual geometric mean limit of 1.03 mg/l TN and is far below the one in three year annual geometric mean limit of 0.18 mg/l TP established by the Final Rule.

Based on using the existing Econfina River data, Buckeye requested HDR/HydroQual, Inc. perform a data analysis of the Florida Impaired Waters Rule database for WBID 3402. The results of this analysis determined a 1.49 mg/l TN and a 0.11 mg/l TP. The complete analysis is included in the HDR/HydroQual, Inc. Technical Memorandum.

Based on the Site-Specific Biological, Chemical, and Physical Data Method, Buckeye is proposing site specific alternative nutrient criteria of 1.49 mg/l TN and 0.11 mg/l TP for the Econfina River, WBID 3402, which begins at 30°5'20.450"N, 83°53'10.902"W and extends upstream in the main channel and tributaries of the Econfina River. This represents an increase in TN concentration and a decrease in TP concentration as compared to the criterion in the Final Rule.

It is important to establish both of these limits for the Econfina. The higher TN concentration reflects the excellent biological health of the Econfina River and prevents an inappropriate impairment determination. The lower TP concentration also reflects the excellent biological health of the Econfina River and will ensure protection of Instream conditions. In addition, the 2009 USEPA Fenholloway River nutrient TMDL established natural runoff load allocations based on existing Econfina levels. These levels need to be maintained to protect the downstream Fenholloway and Econfina estuary and coastal waters from excess chlorophyll-a which could have adverse impact on submerged aquatic vegetation. Therefore, although it is undermined whether higher Instream TP values would be acceptable within WBID 3402, it is necessary to maintain current concentrations to protect downstream marine water bodies.

Fenholloway River (WBIDs 3473B and 3473C)

The Fenholloway River is a significantly disturbed flowing water which spans the length of Taylor County Florida and ultimately drains into the Gulf of Mexico. The primary cause of the disturbance is the Buckeye pulp mill which currently discharges its final treated effluent into the freshwater portion of the river. Historically, the Fenholloway River's designated use was classified Class V (Industrial, Navigation, and Utility). Based upon the findings of the December 1994 FDEP Fenholloway River Use Attainability Analysis (UAA), the Florida Environmental Regulatory Commission reclassified and EPA Region 4 approved the reclassification to Class III (Recreation, Propagation and Maintenance of a Healthy, Well-Balance Population of Fish and Wildlife) effective December 31, 1997. The findings of the UAA anticipated the need for removing the Buckeye treated effluent from the freshwater portion of the river as well as site specific water quality criteria for dissolved oxygen, color and nutrients based upon the Econfina River. FDEP has divided the freshwater portion of the Fenholloway into two WBIDs, 3473B representing the freshwater below the pulp mill, and 3473C representing the freshwater above the pulp mill.

The waters of the Fenholloway downstream of the pulp mill, both fresh and marine, are considered impaired for nutrients. In 2009, USEPA Region 4 established a nutrient TMDL for the Fenholloway River. The load basis of the TMDL, which for point and non point source loads achieves an annual average chl-a reference condition of 5 ug/l in the Fenholloway river estuary and adjacent coastal area. This chl-a target supports healthy submerged aquatic vegetation growth, is based upon the Econfina estuary near shore system and is consistent with the EPA National Coastal Condition Report II recommendations for Gulf Coast Estuaries (USEPA, 2004). This TMDL established the natural freshwater runoff load allocation based on the reference Econfina River.

Based on the work of the 1994 FDEP UAA and the 2009 USEPA TMDL, Buckeye is proposing using the Other Scientifically Defensible Method to establish site specific alternative nutrient criteria for the Fenholloway by using the unimpaired Econfina River as the reference condition. We propose a criteria of 1.49 mg/l TN and 0.11 mg/l TP for the Fenholloway River beginning at 30°4'24.573"N, 83°40'3.893"W and extending upstream in the main channel and all tributaries (WBIDs 3473B and 3473C). These limits will protect the Instream as demonstrated by the healthy condition of the Econfina River and will protect the downstream water bodies by maintaining the natural runoff load allocation approach established in the 2009 TMDL. As with the Econfina River, although it is undermined whether higher Instream TP values would be acceptable within WBIDs 3473B and 3473C, it is necessary to achieve current Econfina River concentrations to protect downstream marine water bodies.

The Fenholloway River downstream of the pulp mill (WBID 3473B) currently does not achieve the proposed alternative criterion. The 2009 USEPA TMDL established a nutrient waste load allocation for the Buckeye effluent which will be implemented with the renewal of its NPDES wastewater permit. It is anticipated this NPDES permit will include an implementation schedule, which when complete will relocate the effluent to WBID 3473A and achieve the proposed alternative criterion. The TMDL anticipated the relocation of the effluent to WBID 3473A.

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